Intended use of IPO proceeds and firm performance: A quantile regression approach

Andriansyah, Andriansyah and Messinis, George

Ministry of Finance, Indonesia, Victoria University, Australia

2016

Intended use of IPO proceeds and firm performance: A quantile regression approach

Andriansyah Andriansyah[a,b,*] and George Messinis[a]

[a]Victoria Institute of Strategic Economic Studies, Victoria University, Melbourne, Australia
[b]Ministry of Finance of the Republic of Indonesia, Jakarta, Indonesia

Abstract

This paper employs quantile regressions to investigate the link between intended use of proceeds and post-issue operating performance of IPO firms in Indonesia over the period of 2000-2010. The evidence presented here suggests that post-issue performance can be explained by a firm's motivation to IPO issue. Investment in fixed assets and stock market shares associate with better performance for average and high performing firms while other usages seem to lead to poor performance. The findings are robust when ownership structure was considered. These results have policy implications for the management of IPOs.

Keywords: IPO intentions, firm performance, compositional data, quantile regressions, Indonesia.

JEL Classification: C51, G14, G31, G32

* Corresponding author. Postal Address: Victoria Institute of Strategic Economic Studies, Victoria University, P.O. Box 14428, Melbourne, Victoria, Australia 8001, Street address: Level 13, 300 Flinders St, Melbourne Victoria Australia 3000. E-mail: andriansyah.andriansyah@vu.edu.au.

1. Introduction

Jain and Kini (1994) first reported evidence of a post-issue operating performance decline in Initial Public Offering (IPO) firms in the USA markets. Since, numerous empirical studies have confirmed this phenomenon in other markets such as in Italy (Pagano *et al.* 1996, 1998; Carpenter & Rondi 2006), Australia (Balatbat *et al.* 2004), China (Wang *et al.* 2004; Wang 2005), Japan (Cai & Wei 1997) and Thailand (Kim *et al.* 2004). Three mainstream explanations have been advanced: the agency theory, the window-dressing behaviour, and the market-timing hypothesis (Jain & Kini 1994; Loughran & Ritter 1997; Mikkelson *et al.* 1997; Jenkinson & Ljungqvist 2001; Draho 2004).[1] The agency theory maintains that the reduced initial entrepreneur's ownership dampens managerial incentives which then lead to overinvestments. The window-dressing behaviour postulates that pre-IPO performance is overstated, meanwhile the market-timing hypothesis states that firms go public coincidently in times of good but unsustainable performance or when the IPO market is overvalued or "hot". None of these explanations, however, relate to the motivations of firms going public.

This paper explores the possibility that IPO motivation may be critical to post-IPO firm performance. For instance, financial motives aimed to raise capital for growth may lead to better performance than strategic non-capital motives. In this context, this paper seeks to utilise information on intended use of proceeds to examine the role of motivation in post-issue operating performance.

Pagano *et al*. (1998) and Carpenter and Rondi (2006) provide insights into different motivations for companies going public. The former suggests that the intension is to take advantage of the window of opportunity in order to recover their balance sheet after a high investment and growth period, while carve-out firms go public to maximize the IPO proceeds for the benefit of previous owners. The latter study further shows that "new-style" firms (independent and small firms), utilize the proceeds to de-leverage and re-balance their capital structure, whereas the "old-style" firms (affiliated and large firms) seek to exploit a hot primary market.

---

[1] These theoretical explanations are basically also similar to those for the other well-known IPO or seasonal equity offering (SEO) phenomena (e.g. initial under-pricing, long-run underperformance and IPO cycles).

The motivations behind an IPO, however, are interrelated and may be tacit. There are three main approaches to identifying motivation in the IPO literature. The first is by surveying managers of issuing firms (Brau & Fawcett 2006; Brau 2012). The second entails the utilisation of explicit statements of motivations in prospectuses (Rydqvist and Hoghlom (1995). Last is the Kim and Weisbach (2008) approach relying on accounting measures of IPO firms. In theory, the survey approach seems the best as it reveals ex-ante motivation but surveys are conducted with considerable lag and are costly. On the other hand, prospectuses do not always disclose motivation while the indirect approach conflates motivation and consequence since cash proceeds will eventually be allocated into several financial accounts over several periods after the IPO year.

This paper proposes to overcome these limitations by utilizing prospectuses information on the intended use of proceeds. Such information has been utilised in the context of the IPO under-pricing (Leone *et al.* 2007), the performance of seasonal equity offering (SEO) firms (Jeanneret 2005; Autore *et al.* 2009); . Yet, the information has not been exploited in the context of the post-issue performance of IPO firms. This study builds on Chemmanur and Fulghieri (1999) and Subrahmanyam and Titman (1999) who highlight the role of capital motives (i.e., working capital financing and fixed asset investment), as compared to strategic non-capital motives.

The most interesting feature of intended use of proceeds data is that it is compositional data. The use of such data as in regression analysis leads to either perfect multicollinearity or misleading interpretations (Hron *et al.* 2012). In the current IPO literature, the compositional nature of intended use of proceeds (IUP) data is generally ignored (Fry 2011). Here, we adopt the zero replacement technique of Fry *et al.* (2000) and the repeating isometric log ratio transformation of Hron *et al.* (2012) to avoid these issues. These techniques then allow us to employ quantile regressions to examine the relationship in question along the distribution of post-issue operating performance

This study examines the relationship between the post-issue operating performance and intended use of the IPO proceeds in Indonesia. As an emerging economy, Indonesia has seen the number of IPOs grow in recent times; ie., in the period 1977-2010, there 522 companies went public raising IDR 495.61 trillion, of which 210 during 2000-2010. Compared to its neighbours in South-East Asia, the

number of Indonesian IPOs in 2010 (23) were lower than Singapore (31) and Malaysia (29) but higher than Thailand (11) and Philippines (3).[2]

The intended use of proceeds data was collected manually from prospectuses on the basis of a sample convenience and easy access to prospectuses[3]. By regulation, all firms must stipulate how they intend to use IPO proceeds. This study extends Bapepam-LK (2009)[4] who describes intended and actual use of proceeds for 20 companies in 2008 in several ways. Firstly, it only focuses on equity public offerings. Secondly, it expands the sample into a panel of 140 non-finance listed firms over the period 2000-2010. Thirdly, it only utilises data on the intended use of proceeds[5] and it also reclassifies the different types of use of proceeds. Lastly, it employs more formal econometric techniques to assess the role of motivation on different uses of the proceeds on a variety of operating performance indicators.

This paper is structured as follows. Section 2 describes the data and the classification of intended use of proceeds. Section 3 outlines the empirical methodology dealing with compositional data with zero in quantile regressions. Section 4 presents and discusses the results. Finally, section 5 summarizes and concludes.

2. Data

The sample includes public firms that have received an effective statement from the securities authority[6] over the period of 2000-2010. This period is on the basis that 1999 was loosely the end of the Asian Financial Crises and data

---

[2] This is on the basis of World Federation of Exchanges data.

[3] Autore *et al.* (2009) also highlight the importance of manual data collection on the intended use of proceeds. SDC Platinum, the well-kwon new issue databases, for example, classify almost all cases as "general corporate purpose".

[4] The first author was the leader of the research team conducting the study.

[5] Note, the intended use of proceeds may not match the actual use of proceeds in a particular year, given that the use of proceeds may take place over several years. Yet, a change from intended to actual requires approval by shareholders at an annual general meeting. In Indonesia, disclosure on actual use of proceeds can be found in the Report on the Use of Fund Received from a Public Offering (Rule X.K.4) which must be submitted to the securities authority on quarterly basis until all the proceeds have been fully used.

[6] The principal regulator is the Financial Services Authority of Indonesia (OJK in Indonesian abbreviation), previously known as Capital Market and Financial Institutions Supervisory Agency (Bapepam-LK).

availability given that only 42 of 321 firms going public in the period 1977-1999 had prospectuses available at *Bloomberg Terminal*. Electronic prospectuses were downloaded from the *Bloomberg Terminal*. Of 201 public firms with effective statements in the period under investigation, the following were excluded: 5 due to unavailable prospectuses; 2 that did not undertake an IPO; 1 which undertook limited offering to its existing shareholders; 13 due to lack of financial data from *Thomson Reuters* fundamentals collected from *Datastream Professional,* and 40 due to incomparability with those of industrial firms. Our final sample consists of 140 firms listed on the Indonesia Stock Exchange (IDX).

INSERT TABLE I ABOUT HERE

Panel A of Table I shows the distribution of the sample by the year of issuance. In the last four years of the sample period, there are 69 firms undertaking an IPO which account for 49.28% of the total sample. The largest sample with 23 firms is from the year 2001; while the smallest sample with 4 firms is from the year 2003 and 2005, respectively. Panel B exhibits the sample distribution by industry. A majority of the sample, accounting for 30% of the total firms, are from trade and services industry. Miscellaneous and consumer goods industries with 5 firms and 6 firms, respectively, are least representative. About 92.14% of the sample in Panel C includes IPOs that sold primary shares only. The rest of the sample combined the offerings by selling secondary shares as well[7].

The intended use of proceeds is classified into five categories as follows:[8]

(1) Fixed assets investment;

(2) Working capital financing;

(3) Investment in shares of stock;

(4) Debt repayments;

(5) Disinvestment.

Fixed assets investment and working capital financing are defined as investment in non-current assets and current assets, respectively. Investment in

[7] Huyghebaert and Van Hulle (2006) highlight the fact that established firms tend to issue secondary shares while young firms prefer to issue primary shares.

[8] Following Leone *et al.* (2007), Appendix A provides examples of intended use of proceeds statements in prospectuses together with the classification adopted here.

shares of stock is a capital contribution to the firm's subsidiaries and other firms which includes share incremental of subsidiaries. Debt repayment is a spending for paying principal debts balance. Finally, disinvestment is the proportion of shares that are sold by initial owners and the total proceeds that go to them, rather than to the firm. This classification is a simplified version of Bapepam-LK (2009) and Leone *et al.* (2007) who use seven classes but an expansion of Autore *et al.* (2009) who aggregate into three categories: investment, debt repayment, and general corporate purpose.

As in Subrahmanyam and Titman (1999), the allocation to fixed assets, in contrast to working capital financing, is essentially growth financing. Autore *et al.* (2009) find that IPO firms that choose this kind of investment experience no decline in operating performance, in contrast to firms choosing either debt financing or working capital financing. They argue that when cash proceeds are used for refinancing purposes, this acts as a signal that the issuer is timing the market. The expected long-run performance of such an opportunistic firm is not as good as firms that disclose that the proceeds will be used for non-refinancing purpose, e.g. investment purposes. We, thus, treat the first two classes as capital motives, and the rest as strategic, non-capital motives.

Information on the type of and number of shares offered, offer price, ownership structures, and the intended use of proceeds was extracted manually from the prospectuses and financial data collected includes sales or revenue, operating profit, net income, debts, capital expenditures, total assets, and firm employment. Three measures of operating performance are used: operating profit scaled by total assets (*EBIT/TA*), net income per total assets (*NI/TA*), and net sales as a share of total assets (*Sales/TA*). To facilitate industry benchmarking, industry-adjusted performance is then calculated as the difference between a firm operating measure and its industry median performance, the latter being calculated after assigning each firm to an industry, as per the Jakarta Industrial Classification set by the IDX. The use of median is a common practice in IPO literature (Jain & Kini 1994; Kim *et al.* 2004; Autore *et al.* 2009) due to its insensitivity to outliers. Table II provides a complete list of variables and their definitions.

INSERT TABLE II ABOUT HERE

3. Methodology

3.1 Compositional data with zeros

Fry (2011) argues that the most common treatment of compositional data is the log-ratio transformation from unit simplex to real Euclidian space. There are three types of the log-ratio transformation introduced by Aitchison (1986): the additive log-ratio (alr), the centred log-ratio (clr), and the isometric log-ratio transformations (ilr).

For compositions with D observations $\mathbf{x} = (x_1, \dots, x_D)'$, where $x_i > 0$ and $\sum_{i=1}^{D} x_i = 100\ (or\ 1)$, each transformation is defined as follows:

$$\mathbf{y}_{alr} = (y_1, \dots, y_{D-1})' = \left(ln\frac{x_1}{x_D}, \dots, ln\frac{x_{D-1}}{x_D} \right)' \quad [1]$$

$$\mathbf{y}_{clr} = (y_1, \dots, y_D)' = \left(ln\frac{x_1}{\sqrt[D]{\prod_{j=1}^{D} x_j}}, \dots, ln\frac{x_D}{\sqrt[D]{\prod_{j=1}^{D} x_j}} \right)' \quad [2]$$

$$\mathbf{y}_{ilr} = (y_1, \dots, y_{D-1})' = \left(\sqrt{\frac{D-1}{D}} ln\frac{x_1}{\sqrt[D-1]{\prod_{k=2}^{D} x_i}}, \sqrt{\frac{D-j}{D-j+1}} ln\frac{x_j}{\sqrt[D-j]{\prod_{k=j+1}^{D} x_i}}, \dots, \sqrt{\frac{1}{2}} ln\frac{x_{D-1}}{x_D} \right)'$$

$$\text{for } j = 2, \dots, D-2 \quad [3]$$

From D-part simplex, the alr and ilr transformations reduce the number of dimensions to *(D-1)*-dimensional real sector, while the clr transformation keeps the same number of D-dimensions.

The main problem with all the transformations is that they require $x_i > 0$, which is inapplicable for the intended use of proceeds data that may contain zero observations. Aitchison (1986) introduces four possible approaches to handle data with zeros namely, amalgamation, zero replacement, outlier investigation, and sensitivity analysis. Fry *et al.* (2000), however, argue that zero replacement may be the most appropriate technique for microeconomic data as in this study.

A zero replacement technique is mainly designed to replace the zeros with very small values. Let C be the number of zero values, $D - C$ is therefore the number of non-zero components. Aitchison (1986) proposes to replace the zero with $z_0 = \delta(C+1)(D-C)/D^2$ and to subtract $z_{N0} = \delta C(C+1)/D^2$ from the non-zero, where δ is the maximum rounding-off error. However, Fry *et al.* (2000) argue that

the non-zero subtraction needs to be modified to preserve the share ratio feature by replacing the non-zero with $x_i(1 - z_{N0})$ instead of $x_i - z_{N0}$.[9] Furthermore, they recommend some adjustments to be made for the value z_0 in order to investigate the robustness of the results, i.e. either $\frac{z_0}{\max\limits_{(1\leq i\leq N)}(total\ proceeds_i)}$, $\frac{z_0}{\min\limits_{(1\leq i\leq N)}(total\ proceeds_i)}$, or $\frac{z_0}{\text{median}_{(1\leq i\leq N)}(total\ proceeds_i)}$, where max (.), min (.), and median (.) symbols represent the maximum, minimum, and median of total proceeds received by firm *i*, respectively. This paper uses the median and calculates δ and z_{N0} using the adjusted-z_0.

The next step is to employ the repeating isometric log-ratio transformation (ilr) proposed by Hron *et al.* (2012) due to its simplicity in interpreting parameter estimates. Hence, the approach adopted here is as follows:

Step 1 Implement the zero and non-zero replacement procedure described above. Therefore, for $x_i = 0$ the x_i is replaced by z_0 and for $x_i > 0$ the x_i is replaced by $x_i(1 - z_{N0})$;

Step 2 Choose an arbitrary order of $\mathbf{x} = (x_1, \dots, x_D)'$. This also means that x_D is chosen as a basis;

Step 3 Conduct the ilr transformation for $\mathbf{x}$, resulting $\mathbf{y}_{ilr} = (y_1, \dots, y_{D-1})'$ and keep the y_1 as the proxy for x_1; [10]

Step 4 Run a regression of the dependent variables on the ilr transformed variables and other independent variables;

Step 5 Keep the estimate and standard errors for y_1 and ignore those for other transformed variables $(y_2, \dots, y_{D-1})'$;

Step 6 Repeat Step 2 by rearranging the order of $\mathbf{x} = (x_2, x_1, \dots, x_D)'$;

Step 7 Repeat Step 3 to Step 5, but this time keep the y_2 as the proxy for x_2;

Step 8 Repeat Step 6 and 7 until all variables is placed at the first order in the $\mathbf{x}$ and all estimates and standard errors for all transformed variables $\mathbf{y} = (y_1, y_2, \dots, y_D)'$ are constructed;

Step 9 Keep the estimates and standard errors for the constant and other independent variables from any run in Step 4. All estimates and standard

[9] The replacement for the zeros is still the same i.e. $\delta(C + 1)(D - C)/D^2$.

[10] The *robCompositions* R-package was used to arrive at the isometric log ratio transformation.

errors for these variables are the same for each run in as shown by Hron *et al.* (2012).[11]

Hron *et al.* (2012) show that the simplicity of this approach is based on the fact that the relation between x_1 and y_1 in each step 3 can be given by

$$x_1 = exp\left(\frac{\sqrt{D-1}}{\sqrt{D}}\right) y_1 \quad [4]$$

Therefore, the interpretation of the transformed variable is as straightforward as a usual interpretation in a linear regression.

3.2 The model

The relationship between firm performance and intended use of proceeds can be specified as follows:

$$\begin{aligned} Performance_i = \beta_0 + \beta_1 Fixed\ asset\ investmet_i + \\ \beta_2 Working\ capital\ financing_i + \\ \beta_3 Investment\ in\ shares\ of\ stock_i + \beta_4 Debt\ repayment_i + \\ \beta_5 Disinvestment_i + control\ variables + \varepsilon_i \end{aligned} \quad [5]$$

The dependent variable *Performance*$_i$ is the cumulative change in an operating performance measure (i.e. *EBIT*/*TA*, *NI*/*TA*, or *Sales*/*TA*) from a year before IPO to two years after IPO (+2 to -1). In addition, we are also interested in understanding the impact of going public on firm employment, as an alternative measure of performance (i.e., dependent variable). The variables of interest represent the proportion of the proceeds that firm *i* received and allocated to five type of usages, i.e. fixed-asset investment, working capital financing, investment in shares of stock, debt payment, and disinvestment. Here the transformed variables described in previous section are used. The control variables are total proceeds scaled by total assets, firm size measured by the total assets, leverage measured by the debts scaled by total equities, and firm age measured by the number of years from its establishment date to its effective statement date. All control variables but total proceeds are measured at the year prior to IPO, while total proceeds are measured at the IPO year. These control variables are also used in Rajan and Zingales (1995), Mikkelson *et al.* (1997), Wang (2005), Carpenter and Rondi (2006), and Autore *et al.*

[11] Although Hron *et al*. (2012) focuses solely on independent variables in compositional data, the approach can be extended to non-compositional variables.

(2009).[12] We also control for initial conditions measured by the cumulative change in operating performance measures or the number of employees from a year before IPO to the IPO year. In addition, industry dummies and year dummies are also included.[13]

3.3 Quantile regressions

The estimation method used for Equation [4] above is the nonparametric quantile estimation, introduced by Koenker and Bassett Jr (1978) and Koenker (2005). Following Hao and Naiman (2007)'s notation, a quantile regression model, with $0 < p < 1$, is generally specified as follows:

$$y_i = x_i'\beta^{(p)} + \varepsilon_i^{(p)} \qquad [6]$$

where y_i is the dependent variable, x_i is $k \times 1$ vector of independent variables, $\beta^{(p)}$ is an unknown $k \times 1$ vector of parameters associated with the p^{th} quantile and $\varepsilon_i^{(p)}$ is an unknown p^{th} quantile of the error term which is required to be zero. In this study, three different values of p or quantiles are used: the 25th percentile, the 50th percentile (or the median), and the 75th percentile of the conditional distribution. The lower (higher) quantile represents low (high) performing firms where the cumulative change is lower (higher) than the median of conditional distributions. Note, model (6) assumes that x_i is not correlated with the error term.

The p^{th} quantile regression estimators $\beta^{(p)}$ can be obtained by minimizing the average weighted distance from y_i to a given $\hat{y}_i$ as follows:

$$\hat{\beta}^{(p)} = \arg\min \left(p \sum_{y_i \geq x_i'\beta^{(p)}} \left| y_i - x_i'\beta^{(p)} \right| + (1-p) \sum_{y_i < x_i'\beta^{(p)}} \left| y_i - x_i'\beta^{(p)} \right| \right) \qquad [7]$$

For estimating standard errors in the nonparametric quantile regressions, we need to specify a kernel and a bandwidth for density estimation when residuals are independent and identically distributed. Greene (2012) highlights that the choice of the bandwidth is more crucial than that of the kernel. Here, the Epanechnikov kernel function and the Chamberlain's bandwidth are chosen. The former is preferable due

[12] Other control variables that have also been used by others are log of the market value of equity (Autore *et al.* 2009), relative offer size (Autore *et al.* 2009), growth (Short & Keasey 1999), and secondary sales (Mikkelson *et al.* 1997).

[13] In an earlier draft, we also used the cumulative changes from a year before to three years after IPO (+3 to -1). This, however, substantially reduced the number of observations. Note, we have also experimented by dropping the initial conditions variable. The estimation results are available upon request and show similar patterns.

to its efficiency in minimizing the mean integrated squared error (Pagan & Aman 1999), and the latter due to its simplicity compared to other alternative bandwidths.

Bootstrap standard errors in quantile regressions are usually employed to account for heteroskedastic errors. The quantile regression tests of Machado and Santos Silva (2000)[14], however, show that heteroskedasticity is not presented in our dataset. Our dependent variable is the cumulative change of either *EBIT*/*TA*, *NI*/*TA*, *Sales*/*TA*, or the number of employees over the period *t* to *t+3* where *t* is IPO year. The tests are also run by using the specification in equation [4] for three different quantiles (p = 0.25, 0.5, and 0.75). The total tests run are therefore 240 times (4 dependent variables × 4 periods of cumulative change × 3 quantiles × 5 repeating regressions using isometric log ratio transformation approach). The number of cases where the tests cannot reject the null hypothesis of the constant variance is presented in Table III. The test results with the 52% non-rejection frequencies at the 10% level generally support the use of the standard nonparametric method rather than bootstrapping.

INSERT TABLE III ABOUT HERE

4. Results and Discussion

4.1 IPO firm characteristics and descriptives

Table IV presents descriptive statistics of firm characteristics (Panel A) and offering measures (Panel B) at the IPO year. On average, a firm goes public after 15 years from its establishment date. The number of employees varies greatly across firms, with the mean (median) of 1,159 (431) employees per firm. Similar large variations are also prevalent in terms of assets, sales, and debts. The spread for the middle 50% of the sample between the first quantile and the third quantile – as a measure of dispersion – for total assets range from IDR 127 billion to IDR 2,153 billion, with the mean (median) of IDR 2,218 billion (IDR 438 billion). The spread for sales and debts is also high relative to other variables such as profitability. Among the measures of profitability, however, operating income has the greatest variation.

[14] These tests utilise the fitted values of the dependent variable in quadratic form.

INSERT TABLE IV ABOUT HERE

Panel B of Table IV shows that the mean (median) offer price in an IPO is about IDR 665 (IDR 268). Total proceeds that a firm received from an IPO also varies greatly, spreading from IDR 31 billion to IDR 368 billion. This cash proceeds is received by selling 38% of the total issued shares on average. The cost of issuing is about 4% of the total proceeds. In terms of under-pricing, this study shows that over the period of 2000-2010, the share price increased by 35% relative to the offer price at the first day of trading. This percentage is somewhat different from that of Darmadi and Gunawan (2013), documenting 22% of under-pricing over the period of 2003-2011. It is also quite common in Indonesia that an issuer will sweeten its IPO by providing a free number of warrants for a share bought by an investor. There are 54 firms offering these sweeteners, accounted for 39% of the total sample.

The firm characteristics and offering measures are comparable to the current world standards observed by Jenkinson and Ljungqvist (2001). Due to fierce competition across stock exchanges around the world, the characteristics of new public firms have been converging in terms of age, industry and IPO purpose. These firms are now younger, from new industries, and more likely to participate in an IPO as a means to raising new capital. In Europe, for instance, before 1995 the IPO markets were dominated by well established firms aged 50 years on average, from traditional industries such as machine tools manufacturers, and used public offerings as the ways for initial owners to cash out their stakes in the firms. Huyghebaert and Van Hulle (2006) highlight that in contrast to the USA IPO market that is dominated by primary shares, an offering in the European market now is more likely to consist of both primary and secondary shares. In addition, secondary shares are often issued by established firms with large internal funds, while young firms with less internal cash generation capability prefer to issue primary shares

Panel C of Table IV provides insights into the ownership structure of IPO firms at times t-1, t, and t+3 with t being the IPO year. Obviously, initial shareholders hold all stakes of the firm before the IPO, and there are no outside public stakes. After the IPO, however, dilution of initial ownerships begins. At the IPO year, initial owners had 71.56% of the total ownerships. The reduction of ownership continues over three years after the IPO. This is quite similar to the USA market where the mean

ownership retention rate is 71% (Jain & Kini 1994). However, compared to a similar emerging market, this retention rate in Indonesia is much higher than the retention rate of 38% in Thailand (Kim *et al.* 2004). A year after IPO, initial owners still maintain 64% of the ownership but two years later their stake reduces to 54%. Panel C also confirms that the dilution of ownership structure measured by the mean or median difference is statistically significant and different from zero..

INSERT TABLE V ABOUT HERE

Table V reports the distribution of intended use of proceeds by type of offerings (Panel A), by year (Panel B), and by industry (Panel C). In case of primary offerings where issuers only sell unissued shares to public, the initial owners do not receive any proceeds. Thu, disinvestment would be zero in primary offerings. If issuers sell both primary and secondary shares, in which there are 11 cases in the sample, a portion of secondary shares sold, on average, is 47.73%. Generally, the two biggest portions of the IPO proceeds are allocated for fixed asset investment and working capital financing. Mean (median) value of fixed asset investment is 44.21% (45.61%), while that of working capital financing is 24.34% (19.90%). Investment in shares of stock and debt payments shared a fairly similar proportion of 15.75% and 11.95%, respectively.

The distribution of total proceeds into several uses is relatively similar over time. Two distinct differences may be noticed in 2003 and 2004. In 2003, a portion of the proceeds allocated to disinvestment was higher than working capital financing, even though 85% of the proceeds were mainly allocated to fixed asset investments. Also, working capital financing received about 3% higher portion than fixed asset investment in 2004. It is fair to say that the distribution is also similar across industry. Agriculture and consumer goods, however, tended to allocate more proceeds to pay outstanding debts rather than to finance current asset. Firms from agriculture industry, for instance, allocated 23% of the capital raised through IPOs to pay their debts, where the allocation for working capital financing was only a half of it, or about 16.46%.

4.2 Pre- and post-issue operating performance

INSERT TABLE VI ABOUT HERE

Table VI compares and contrasts three measures of operating performance and the number of employees three years before and three years after the IPO. In term of *EBIT*/*TA* (Panel A), three years before and at the IPO years, the average operating profits are about 1% to 2% of the total assets. Using the median value, the operating profits range from 1% to 3%. However, three years later, the ratios decrease to negative values, lower than industry median. Panel B of Table VI illustrates similar patterns for net income-to-total assets. There is one noticeable difference, however. There is an increase in *NI*/*TA* from three years before the IPO until the IPO year, from 1% to 2%. Afterwards, there is a significant decrease, for instance, the average *NI*/*TA* decreases to -4% at the third year after IPO.

Panel C of Table VI partly shares similar patterns of decreasing operating performance as in Panel A and Panel B. Up to three years after the IPO, the ratio of sales to total assets decreases relative to the three-year period before IPO and at the IPO year. In sharp contrast, panel D of Table VI exhibit a very different pattern. Here, employment tends to increase up to two years after the IPO, even though it decreases on the third year.

These large variations in operating performance are clearer when the data is presented in box plots, as shown in Appendix B. In view of some outliers, Appendix C illustrates the results in the form of quantile plots which again point to outliers at the lower and higher end of the distribution.

In order to account for such outliers, analysis proceeds with quantile regressions. The decreases in operating performance measures and the increases in the number of employees relative to a year before IPO observed above are again confirmed using mean difference and median difference tests in Table VI. In general, there is a decrease in operating performance of the IPO firms over the period of three years after the IPO, except for employment which increases.

4.3 Intended use of proceeds and operating performance

Tables VII - X present quantile regression estimates of Equation (5) for three quantiles, p=(0.25, 0.50, 0.75).

INSERT TABLE VII ABOUT HERE
INSERT TABLE VIII ABOUT HERE
INSERT TABLE IX ABOUT HERE
INSERT TABLE X ABOUT HERE

Table VII indicates that the decline in *EBIT*/*TA* of low performing firms could be explained by the fixed asset investment. This can be observed by the negative sign of the estimate for the 25% percentile. For average and high performing firms, however, the impact of fixed asset investment is positive. For these firms, disinvestment has more explanatory power of the decline in *EBIT/TA*. The corresponding estimate shows that 1% increase in the proportion of IPO proceeds going to initial owners leads to 0.02% decrease in *EBIT*/*TA.* Note, working capital financing and debt repayment are also responsible in the decline for the average performing firms.

In terms of *NI/TA,* Table VIII, debt repayment and disinvestment can explain the decline in operating performance for average and high performing firms. For low performing firms, none of the usages has a negative impact to the cumulative change in *NI/TA*. In fact, working capital financing leads to positive business outcomes. Table IX, on the other hand, shows that the impact of working capital financing is negative for low performing firms. The variation in cumulative change in *Sales*/*TA* for average and high performing firms furthermore cannot be explained by the different intended use of proceeds.

Table X documents the increase in employment after going public. In general working capital financing, investment in shares of stock and debt repayment positively impact on the cumulative change of employment over two years after the IPO. However, the positive impact of investment in shares of stock is only realised by high performing firms and that of debt repayment, can only be realised by average performing firms. Fixed asset investment has a negative effect on employment.

As expected, all control variables had significant explanatory power in all measures of operating performance and employment. While total proceeds and the firm age have an adverse effect, firm size, leverage and initial condition all have a positive impact.

Thus, the evidence so far is broadly suggest that the intention to allocate IPO proceeds to fixed asset investment and investment in shares in stock leads to the

better outcomes, while other usages lead to a decline in operating performance. The advantage of fixed asset investment, however, is more notable for average and high performing firms. On the other hand, the disadvantage of working capital financing is more notable in low and average performing firms.

4.3 Robustness tests

For robustness purposes, further analysis was undertaken to control for ownership structure, defined by the original owner's retention rate. A nonlinear relationship between retention rate and post-IPO performance is explored as in Kutsuna *et al.* (2002), Kim *et al.* (2004) and Wang (2005). Empirically, the relationship between ownership structure and the post-IPO operating performance remains inconclusive. Jain and Kini (1994) and Kutsuna *et al.* (2002) find evidence of poor performance related to managerial ownership retention, while Mikkelson *et al.* (1997) Cai and Wei (1997), and Goergen (1998) fail to confirm such finding. Kutsuna *et al.* (2002) and Wang (2005) show that the relationship between retention and performance may be curvilinear. [15]

In general, this study observes a non-linear relationship between ownership structure, and operating performance or employment; i.e, quadratic for *EBIT/TA* and *NI/*and cubic for employment.

Overall, the results show that ownership structure does not alter the above evidence of a link between intended use of proceeds and operating performance or employment. However, interpretation of the above results, should be cautious since it is possible that the assumption that x_i is not correlated with the error term in equation (6) may not hold. It is plausible that covariate x_i (i.e., the intended use of proceeds) may be susceptible to a non-random selection bias if persistent firm performance drives IPO motivation. For example, firms with above-average market performance may tend to select fixed assets or stock investment as the main motivate for an IPO. To the extent that this is the case, the evidence presented here should be considered as preliminary.

[15] While in an earlier draft we only used a quadratic relationship, now we also included linear and cubic relationships. The estimates for all forms of relationships are available upon request.

5. Summary and Conclusions

This study provides evidence of a decline in post-issue operating performance of Indonesian listed firms after IPO. Using a dataset of 140 non-finance firms over the period of 2000-2010, we find that the variation in three different measures of operating performance can be explained by the diversity of intended use of IPO proceeds. This ex-ante disclosure can be seen as a signal conveying some information on the motivations of an IPO and, in turn, reflects the firm's future prospects.

We distinguish between capital motives and strategic motives as key motives of IPOs. After accounting for compositional data with zero, we show that the intention to allocate IPO proceeds to fixed asset investment and investment in shares in stock lead to an improved operating performance, while other usages lead to a decline in performance. Quantile regressions show that the advantages of investing in fixed assets and shares in stock only apply to average and high performing firms. These findings are robust when ownership structure is considered as a covariate. In this case, there is evidence of a non-linear relationship between the retention rate of initial entrepreneurs and operating performance or employment.

The overall evidence here suggests that the non-capital motive is a key driver of IPO in Indonesia. Debt repayment may be an option exercised while investment in fixed assets seems to be the default decision. The leverage ratio in our sample is practically low, which implies that the firms are able to meet the obligations. Also, fixed asset investment has negative effect on performance for low performing firms. Theoretically, firms make a fixed asset investment because it is expected to be a profitable investment. This may be due to ineffectiveness of the low performing firms, or merely that the two or three years period is not long enough to observe the profit generated from the projects. This finding complements evidence in Autore *et al.* (2009) in the sense that fixed assets investment at least will not adversely affect high performing firms.

Yet, it is important to note again that the findings here may be biased due to endogeneity such as selection effects This possibility calls for further investigation in future research.

Finally, as noted by Carpenter and Rondi (2006), regulators need to formulate policies that not only enable access to equity capital, but also provide incentives for managers to use IPO proceeds for growth oriented projects. The cost of going public

is rather expensive, therefore it is important to make sure that firms, and general public benefit from it. The number of floating shares is also of interest. In order to encourage a listed firm to be a 'real' public firm, the Indonesian government provides tax deductions for a listed firm who has sold at least 40% of its shares to public. Hence, capital markets and policies need to provide better social value for tax-payer funded IPO firms, as in the case of growth oriented projects.

Acknowledgements

The first author is grateful for AusAID through Australian Leadership Awards scholarship for financial support. The assistance of Eko Wijaya of the Financial Service Authority of Indonesia for providing prospectus files is also acknowledged. The authors also like to thank participants in the Australian Conference of Economists and Econometric Society Australasian Meeting in July 2014 for their comments on an earlierdraft.

REFERENCES

Aitchison, J., 1986. The Statistical Analysis of Compostional Data. Chapman & Hall, London.

Autore, D.M., Bray, D.E., Peterson, D.R., 2009. Intended use of proceeds and the long-run performance of seasoned equity issuers. Journal of Corporate Finance 15, 358-367

Balatbat, M.C.A., Taylor, S.L., Walter, T.S., 2004. Corporate governance, insider ownership and operatingperformance of Australian initial public offerings. Accounting and Finance 44, 299-328

Bapepam-LK, 2009. The Use of IPO Proceeds (in Indonesian). Badan Pengawas Pasar Modal dan Lembaga Keuangan, Jakarta

Brau, J.C., 2012. Why Do Firms Go Public? In: Cumming D (ed.) The Oxford Handbook of Entrepreneurial Finance. Oxford University Press, New York, NY, pp. 467-494.

Brau, J.C., Fawcett, S.E., 2006. Intitial Public Offerings: An Analysis of Theory and Practise. The Journal of Finance 61, 399-436

Cai, J., Wei, K.C.J., 1997. The investment and operating performance of Japanese initial public offerings. Pacific-Basin Finance Journal 5, 389-417

Carpenter, R.E., Rondi, L., 2006. Going Public to Grow? Evidence from a Panel of Italian Firms. Small Business Economics 27, 387-407

Chemmanur, T.J., Fulghieri, P., 1999. A Theory of Going Public Decision. Review of Financial Studies 12, 249-279

Darmadi, S., Gunawan, R., 2013. Underpricing, board structure, and ownership: An empirical examination of Indonesian IPO firms. Managerial Finance 39, 181-200

Draho, J., 2004. The IPO Decision: Why and How Companies Go Public. Edward Elgar, Cheltenham UK and Northampton USA.

Fry, J.M., Fry, T.R., McLaren, K.R., 2000. Compositional data analysis and zeros in micro data. Applied Economics 32, 953-959

Fry, T., 2011. Applications in Economics. In: Pawlowsky-Glahn V & Buccianti A (eds.) Compositional Data Analysis: Theory and Applications. Wiley, Hoboken, NJ, pp. 318-326.

Goergen, M., 1998. Corporate Governanve and Financial Performance: A Study of German and UK Initial Public Offerings. Edward Elgar, Cheltemham UK.

Greene, W.H., 2012. Econometric Analysis. Prentice Hall, Boston.

Hao, L., Naiman, D.Q., 2007. Quantile Regression. Sage Publications, California.

Hron, K., Filzmoser, P., Thompson, K., 2012. Linear regression with compositional explanatory variables. Journal of Applied Statistics 39, 1115-1128

Huyghebaert, N., Van Hulle, C., 2006. Structuring the IPO: Emprical evidence on the portions of primary and secondary shares Journal of Corporate Finance 12, 296-320

Jain, B.A., Kini, O., 1994. The Post-Issue Operating Performance of IPO Firms. Journal of Finance 49, 1699-1726

Jeanneret, P., 2005. Use of the Proceeds and Long-term Performance of French SEO Firms. European Financial Management 11, 99-122

Jenkinson, T., Ljungqvist, A., 2001. Going Public: The Theory and Evidence on How Companies Raise Equity Finance. Oxford University Press, New York.

Kim, K.A., Kitsabunnarat, P., Nofsinger, J.R., 2004. Ownership and operating performance in an emerging market: evidence from Thai IPO firms. Journal of Corporate Finance 10, 355-381

Kim, W., Weisbach, M.S., 2008. Motivations for Public Equity Offers: An International Perspective. Journal of Financial Economics, 281-307
Koenker, R., 2005. Quantile Regression. Cambridge University Press, New York.
Koenker, R., Bassett Jr, G., 1978. Regression Quantiles. Econometrica 46, 33-50
Kutsuna, K., Okamura, H., Cowling, M., 2002. Ownership structure pre- and post-IPOs and the operating performance of JASDAQ companies. Pacific-Basin Finance Journal 10, 163-181
Leone, A.J., Rock, S., Willenborg, M., 2007. Disclosure of Intended Use of Proceeds and Underpricing in Initial Public Offerings. Journal of Accounting Research 45, 111-153
Loughran, T., Ritter, J.R., 1997. The Operating Performance of Firms Conducting Seasoned Equity Offerings. Journal of Finance 52, 1823-1850
Machado, J.A.F., Santos Silva, J.M.C., 2000. Glejser's Test Revisited. Econometrica 97, 189-202
Mikkelson, W.H., Partch, M.M., Shah, K., 1997. Ownership and operating performance of companies that go public. Journal of Financial Economics 44, 280-307
Pagan, A., Aman, U., 1999. Nonparametric Econometrics. Cambridge University Press, Cambridge.
Pagano, M., Panetta, F., Zingales, L., 1996. The Stock Market as a Source of Capital: Some Lessons from Initial Public Offerings in Italy. European Economic Review 40, 1057-1069
Pagano, M., Panetta, F., Zingales, L., 1998. Why Do Companies Go Public? An Empirical Analysis. Journal of Finance 53, 27-64
Rajan, R.G., Zingales, L., 1995. What Do We Know about Capital Structure? Some Evidence from International Data. Journal of Finance 50, 1421-1460
Reuters, T., 2013. Reuters Fundamental: Glossary.
Rydqvist, K., Hoghlom, K., 1995. Going Public in the 1980s: Evidence from Sweden. European Financial Management 1, 287-315
Short, H., Keasey, K., 1999. Managerial ownership and the performance of firms: Evidence from the UK. Journal of Corporate Finance 5, 79-101
Subrahmanyam, A., Titman, S., 1999. The Going-Public Decision and the Development of Financial Markets. The Journal of Finance 54, 1045-1082
Wang, C., 2005. Ownership and operating performance in Chinese IPOs. Journal of Banking & Finance 29, 1835-1856
Wang, X., Xu, L.C., Zhu, T., 2004. State-owned Enterprises Going Public. Economics of Transition 12, 467-487

Table I
Sample Distribution by Year, Industry, and Type of Shares Offered

Panel A: Sample distribution by year		
Year	Number of IPOs	%
2000	11	7.86
2001	23	16.43
2002	13	9.29
2003	4	2.86
2004	7	5.00
2005	4	2.86
2006	9	6.43
2007	21	15.00
2008	15	10.71
2009	11	7.86
2010	22	15.71
Panel B: Sample distribution by industry		
Industry	Number of IPOs	%
Agriculture	8	5.71
Basic Industry & Chemicals	14	10.00
Consumer Goods	6	4.29
Infrastructure, Utilities & Transportation	22	15.71
Mining	20	14.29
Miscellaneous	5	3.57
Property, Real Estate & Building Construction	23	16.43
Trade & Service	42	30.00
Panel C: Sample distribution by type of share offered		
Type of share	Number of IPOs	%
Primary shares	129	92.14
Mixed	11	7.86
Total number of sample	140	100.00

Note: An IPO firm, or an issuer, may sell primary shares only, secondary shares only, or both. Primary shares are new shares which are taken from unissued shares of the authorized shares. In contrast, secondary shares are outstanding shares. The proceeds from selling primary shares go to the issuer, while those of secondary shares go to the initial shareholders.

Table II
Variable Definitions

Variables	Source	Definition
Age	Own calculation	The number of years from its establishment date to its effective statement date
Employment	METL	Total number of full-time employees
Assets	ATOT	Total assets
Sales	SREV	Net sales or total revenue
Operating profit	SOPI	Total revenue minus total operating expenses
Net income	NINC	Net income before extraordinary items
Debt	STLD	Total debt outstanding
Capital expenditure	SCEX	Purchases of fixed assets, intangibles and software development costs
Nominal price	Prospectus	A par or face value of the share
Offer price	Prospectus	An actual selling price of the share
Proceeds	Own calculation	The offering price per share times total number of shares offered
Floating shares	Prospectus	The proportion of the number of shares offered relative to the total issued shares
Issue costs	Prospectus	Total costs incurred in issuing the shares
Underpricing	Prospectus	Percentage change of the share price at the first day of trading relative to its offer price
Warrants	Prospectus	Dummy dichotomous which is 1 if the public offering is accompanied with warrants
EBIT/TA	SOPI/ATOT	Operating profit scaled by total assets
NI/*TA*	NINC/ATOT	Net income scaled by total assets
Sales/*TA*	SREV/ATOT	Net sales scaled by total assets

Note: The main sources of data are prospectuses and *Thomson Reuters* fundamentals. Data from the fundamentals is used according to the four letters of chart of account and its definition related to the variable therefore is based on Reuters (2013).

Table III
Machado-Santos Silva tests for heteroskedasticity

Variables	H0: Constant Variance	
	The number of the case when the H_0 is not rejected	Proportion
EBIT/TA	10	0.1667
NI/TA	30	0.5000
Sales/*TA*	45	0.7500
Employment	40	0.6677
Total	125	0.5208

Note: Total number of quantile regressions is 240. The decision to reject the null hypothesis is made at the 5% level of significance.

Table IV
Firm Characteristics and Offering Measures of the IPO Firms

Panel A: Firm Characteristics					
Variables	N	Mean	Q1	Median	Q3
Age (years)	140	15.40	6.61	12.68	20.19
Employment	138	1,158.83	133.0 0	431.00	983.00
Assets (IDR billion)	140	2,218.32	126.7 9	438.60	2,152.57
Sales (IDR billion)	139	1,364.25	51.33	245.60	1,386.11
Operating profit (IDR billion)	139	196.89	3.16	30.72	180.39
Net income (IDR billion)	139	106.95	2.40	20.29	105.24
Debts (IDR billion)	122	699.73	12.31	77.33	526.34
Leverage (% of Equity)	122	0.46	0.10	0.25	0.59
Capital expenditure (IDR billion)	136	168.88	3.70	25.64	137.40

Panel B: Offering measures					
Variables	N	Mean	Q1	Median	Q3
Nominal price (IDR)	140	176.54	100.0 0	100.00	200.00
Offer price (IDR)	140	664.50	160.0 0	267.50	590.00
Proceeds (IDR billion)	140	592.91	30.75	86.06	367.63
Floating shares (%)	140	38.38	21.52	33.47	50.00
Issue costs (% of proceeds)	67	4.16	3.08	4.00	5.13
Underpricing (%)	140	35.21	4.55	22.77	64.32
Warrant	*54 firms (38.57% of total sample)*				

Panel C: Ownership Structure					
	N	Mean	Q1	Median	Q3
Initial shareholders					
t – 1	140	100.00	100.0 0	100.00	100.00
t	140	71.56***	65.11	70.00***	80.04
t + 1	138	64.47***	59.92	67.87***	75.30
t + 2	136	58.80***	54.08	64.54***	71.07
t + 3	114	54.44***	41.06	62.43***	71.20
Public ownership					
t – 1	140	0.00	0.00	0.00	0.00
t	140	24.45***	16.95	23.09***	32.95
t + 1	138	25.53***	18.31	25.15***	32.71
t + 2	136	26.69***	17.08	26.38***	34.63
t + 3	114	29.68***	17.98	28.44***	36.90

Note: Data contains zero value as a result of unavailable or undisclosed information is considered as a missing value. This applies for debts and capital expenditure. All series refer to the IPO year, except in Panel C as specified. Mean difference is tested by using a paired t test, while median difference is tested by using a non-parametric

Wilcoxon signed-rank test. The null hypothesis is that mean or median difference between the stakes in corresponding year and a year before IPO (Year – 1) is zero. Significance at 1%, 5%, and 10% levels (two-sided) are denoted by ***, **, and *, respectively.

Table V
Intended Use of Proceeds Structure of the IPO firms

	Fixed asset investment		Working capital financing		Investment in shares of stock		Debt repayment		Disinvestment	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Panel A: by type of offerings										
All	44.21	45.61	24.34	19.90	15.75	0.00	11.95	0.00	3.75	0.00
Primary	46.20	50.00	24.86	20.00	16.19	0.00	12.76	0.00	0.00	0.00
Mixed	20.90	8.86	18.17	9.61	10.66	0.00	2.54	0.00	47.73	50.00
Panel B: by year										
2000						0.00		17.17		0.00
	35.20	34.03	32.14	34.00	13.18		19.48		0.00	
2001						0.00		0.00		0.00
	44.74	50.00	28.16	20.00	14.43		9.97		2.70	
2002						0.00		0.00		0.00
	44.52	45.00	25.83	29.27	12.54		10.15		6.95	
2003						0.00		0.00		0.00
	85.21	88.75	5.63	5.50	0.00		0.00		9.17	
2004						0.00		0.00		0.00
	31.10	0.00	34.24	20.00	18.57		16.10		0.00	
2005						0.00		14.00		0.00
	60.00	60.00	20.50	21.00	0.00		19.50		0.00	
2006						0.00		0.00		0.00
	31.89	0.00	32.63	30.00	22.22		10.69		2.56	
2007						0.00		0.00		0.00
	46.97	40.00	19.09	20.00	18.43		13.93		1.59	
2008						0.00		0.00		0.00
	51.17	52.00	18.93	15.00	18.74		6.42		4.74	
2009						0.00		0.00		0.00
	40.72	45.72	32.60	33.33	9.03		10.84		6.82	
2010						6.50		0.00		0.00
	41.22	35.00	17.6	8.00	21.27		13.77		6.06	
Panel C: by industry										
Agriculture		32.50		10.82	20.83	0.00	23.00	17.00	3.13	0.00

	36.58		16.46							
Basic Industry & Chemicals						0.00		0.00		0.00
	49.56	60.00	20.27	19.00	17.94		12.23		0.00	
Consumer Goods						0.00		22.50		0.00
	48.05	41.50	15.44	18.82	0.00		26.17		10.34	
Infra, Utilities & Transportation						0.00		0.00		0.00
	62.98	71.15	14.09	10.00	14.01		3.83		5.09	
Mining						0.00		0.00		0.00
	45.30	48.11	16.37	10.00	18.02		8.17		12.14	
Miscellaneous						0.00		0.00		0.00
	37.40	37.00	37.25	40.00	4.32		21.04		0.00	
Prop, Real Estate & Construction	43.44	40.00	28.29	20.00	17.38	0.00	10.88	0.00	0.00	0.00
Trade & Service	34.20	33.18	33.92	31.67	16.61	0.00	13.28	0.00	1.98	0.00

Note: Fixed asset investment, working capital financing, investment in shares, debt repayment and disinvestment are defined in percentage shares of total proceeds. For mixed offerings that include secondary offerings, disinvestment is a proportion of the total proceeds that goes to initial owners.

Table VI
Operating Performance Before and After the IPO Year

	N	Mean	Median
Panel A: *EBIT*/*TA*			
t – 3	74	0.0150	0.0044
t – 2	85	0.0236	0.0099
t – 1	120	0.0235	0.0263
t	139	0.0135	0.0163*
t + 1	138	-0.0140**	0.0003***
t + 2	127	-0.0074*	-0.0043***
t + 3	110	-0.0273*	-0.0088***
Panel B: *NI*/*TA*			
t – 3	74	0.0116	0.0015
t – 2	85	0.0105	0.0057
t – 1	121	0.0097	0.0138
t	139	0.0175	0.0140
t + 1	138	-0.0040	0.0081
t + 2	127	-0.0137	-0.0059***
t + 3	110	-0.0385	-0.0042***
Panel C: *Sales*/*TA*			
t – 3	72	0.3869	0.0598
t – 2	84	0.5708	0.1083
t – 1	121	0.3113	0.0665
t	139	0.0909**	0.0029***
t + 1	140	0.1222*	0.0221***
t + 2	126	0.1964**	0.0085***
t + 3	109	0.1977*	0.0006*
Panel D: *Employment*			
t – 3	70	958.490	451.500
t – 2	81	1025.690	432.000
t – 1	112	1109.260	425.500
t	138	1158.830***	431.000***
t + 1	138	1281.690***	489.000***
t + 2	126	1482.250***	521.500***
t + 3	105	1158.040***	487.000***

Note: *EBIT*/*TA, NI/TA,* and *Sales/TA,* stand for total assets, net income, net sales, all scaled by total assets. *Employment* is the number of employments. Mean difference is tested by using a paired t test, while median difference is tested by using a non-parametric Wilcoxon signed-rank test. The null hypothesis is that the mean or median difference between operating performance in year t=0 to t + 3 and t – 1 is zero, where t is the IPO year. Significance at the 1%, 5% and 10% levels (two-sided) are denoted by ***, **, and *, respectively.

Table VII
***EBIT*/*TA* and Intended Use of Proceeds: Quantile Regressions**

Variable	25% Quantile	50% Quantile	75% Quantile
Constant	0.1687*	0.2095***	0.1954
	(0.0911)	(0.0712)	(0.1188)
Fixed asset investment	-0.0008***	0.0006***	0.0008**
	(0.0003)	(0.0002)	(0.0004)
Working capital financing	-0.0000	-0.0006**	-0.0006
	(0.0003)	(0.0003)	(0.0005)
Investment in shares of stock	0.0001	0.0010***	0.0017***
	(0.0002)	(0.0002)	(0.0003)
Debt repayment	-0.0001	-0.0005**	-0.0005
	(0.0003)	(0.0002)	(0.0003)
Disinvestment	0.0009**	-0.0005*	-0.0013***
	(0.0004)	(0.0003)	(0.0005)
Total proceeds	-0.0146***	-0.0159***	-0.0125**
	(0.0042)	(0.0033)	(0.0055)
Firm size	0.0085***	0.0133***	0.0161***
	(0.0027)	(0.0021)	(0.0035)
Leverage	0.0005	0.0004	0.0003
	(0.0003)	(0.0003)	(0.0004)
Firm age	-0.0001	-0.0009***	-0.0015***
	(0.0002)	(0.0002)	(0.0003)
Initial condition	0.9017***	1.0259***	0.9188***
	(0.0308)	(0.0241)	(0.0402)
Observations	100	100	100
Pseudo R-squared	0.415	0.361	0.342

Note: The dependent variable is the cumulative change in *EBIT*/*TA* over two years after the IPO year. The estimation is using alternative Epanechnikov kernel function and Chamberlain's bandwidth. Significance at 1%, 5% and 10% levels (two-sided) are denoted by ***, **, and *, respectively.

Table VIII
***NI*/*TA* and Intended Use of Proceeds: Quantile Regressions**

Variable	25% Quantile	50% Quantile	75% Quantile
Constant	0.0267	0.2095***	0.1954
	(0.1030)	(0.0712)	(0.1188)
Fixed asset investment	-0.0003	0.0006***	0.0008**
	(0.0003)	(0.0002)	(0.0004)
Working capital financing	0.0008**	-0.0006**	-0.0006
	(0.0004)	(0.0003)	(0.0005)
Investment in shares of stock	0.0000	0.0010***	0.0017***
	(0.0003)	(0.0002)	(0.0003)
Debt repayment	-0.0000	-0.0005**	-0.0005
	(0.0003)	(0.0002)	(0.0003)
Disinvestment	-0.0005	-0.0005*	-0.0013***
	(0.0004)	(0.0003)	(0.0005)
Total proceeds	-0.0146***	-0.0159***	-0.0125**
	(0.0042)	(0.0033)	(0.0055)
Firm size	0.0085***	0.0133***	0.0161***
	(0.0027)	(0.0021)	(0.0035)
Leverage	0.0005	0.0004	0.0003
	(0.0003)	(0.0003)	(0.0004)
Firm age	-0.0001	-0.0009***	-0.0015***
	(0.0002)	(0.0002)	(0.0003)
Initial condition	0.9017***	1.0259***	0.9188***
	(0.0308)	(0.0241)	(0.0402)
Observations	100	100	100
Pseudo R-squared	0.415	0.361	0.342

Note: The dependent variable is the cumulative change in *NI*/*TA* over two years after the IPO year. The estimation is using alternative Epanechnikov kernel function and Chamberlain's bandwidth. Significance at 1%, 5% and 10% levels (two-sided) are denoted by ***, **, and *, respectively.

Table IX
***Sales*/*TA* and Intended Use of Proceeds: Quantile Regressions**

Variable	25% Quantile	50% Quantile	75% Quantile
Constant	-1.4176**	-0.3832	0.1907
	(0.5822)	(0.2797)	(0.4448)
Fixed asset investment	0.0041**	-0.0003	0.0013
	(0.0017)	(0.0008)	(0.0013)
Working capital financing	-0.0044**	-0.0006	-0.0006
	(0.0022)	(0.0011)	(0.0016)
Investment in shares of stock	-0.0011	0.0002	-0.0000
	(0.0016)	(0.0007)	(0.0012)
Debt repayment	0.0025	0.0008	-0.0014
	(0.0017)	(0.0008)	(0.0012)
Disinvestment	-0.0010	-0.0000	0.0007
	(0.0023)	(0.0011)	(0.0017)
Total proceeds	0.0655**	0.0185	-0.0041
	(0.0273)	(0.0131)	(0.0209)
Firm size	0.0269	0.0095	-0.0107
	(0.0175)	(0.0084)	(0.0134)
Leverage	0.0032	0.0011	0.0001
	(0.0021)	(0.0010)	(0.0016)
Firm age	0.0020	0.0020***	0.0009
	(0.0015)	(0.0007)	(0.0011)
Initial condition	1.3451***	1.0476***	0.8485***
	(0.0647)	(0.0311)	(0.0494)
Observations	98	98	98
Pseudo R-squared	0.492	0.382	0.337

Note: The dependent variable is the cumulative change in *Sales*/*TA* over two years after the IPO year. The estimation is using alternative Epanechnikov kernel function and Chamberlain's bandwidth. Significance at 1%, 5% and 10% levels (two-sided) are denoted by ***, **, and *, respectively.

Table X
Employment and Intended Use of Proceeds: Quantile Regressions

Variable	25% Quantile	50% Quantile	75% Quantile
Constant	341.2685	-637.9869	-2,321.7357**
	(392.8847)	(448.6892)	(910.1834)
Fixed asset investment	-1.2861	-3.8668***	-12.3812***
	(1.1383)	(1.2999)	(2.6370)
Working capital financing	2.6369*	2.8179*	5.5292
	(1.4529)	(1.6096)	(3.3658)
Investment in shares of stock	-2.2630**	0.3800	7.5710***
	(1.0249)	(1.1355)	(2.3743)
Debt repayment	1.7549	2.7308**	4.1308
	(1.0762)	(1.1924)	(2.4933)
Disinvestment	-0.8427	-2.0619	-4.8498
	(1.4910)	(1.6519)	(3.4541)
Total proceeds	-12.6832	39.9109*	111.5286**
	(18.3158)	(20.9173)	(42.4316)
Firm size	6.4756	31.4377**	150.2065***
	(11.5934)	(13.2400)	(26.8579)
Leverage	-0.8513	-2.1116	-3.5199
	(1.3235)	(1.5115)	(3.0661)
Firm age	-4.5602***	-7.0325***	-11.9952***
	(1.0050)	(1.1478)	(2.3283)
Initial condition	1.3893***	1.7691***	1.6954***
	(0.0402)	(0.0459)	(0.0932)
Observations	92	92	92
Pseudo R-squared	0.349	0.378	0.449

Note: The dependent variable is the cumulative change in the number of employees over two years after the IPO year. The estimation is using alternative Epanechnikov kernel function and Chamberlain's bandwidth. Significance at 1%, 5% and 10% levels (two-sided) are denoted by ***, **, and *, respectively.

Appendix A.

Example 1. PT. Pelat Timah Nusantara Tbk[16] (Ticker: NIKL)

The net proceeds from the new share issue would be used to revamp and add new production machines in order to increase the efficiency, quality and production capacity from 130,000 tons to 160,000 tons.

The classification: 100% for fixed asset investment

Example 2. PT Ace hardware Indonesia Tbk (Ticker: ACES)

The cash received from this public offering, netted the cost incurred related to this offering, is going to be allocated to following usages:

- *About 43% to open new galleries and expand the existing galleries;*
- *About 26.81% to add working capital, in particular to add inventories;*
- *About 20.19% to repayment bank debts, either short-term or long-term debts;*
- *About 6% to renovate the existing galleries;*
- *The rest, about 4%, to develop information technology*

The classification: 43% for fixed asset investment, 36.81% for working capital financing, and 20.19% for debt repayment.

Example 3. PT Indofarma Tbk (Ticker: INAF)

The public offering sells both 906,250,000 shares owned by the Government of Indonesia and 556,093,750 new shares. The cash received from this public offering where the shares are from unissued shares, netted the cost incurred related to this offering, will be used by the firm for:

- *About 53% to develop production capacity*
- *About 47% to add working capital*

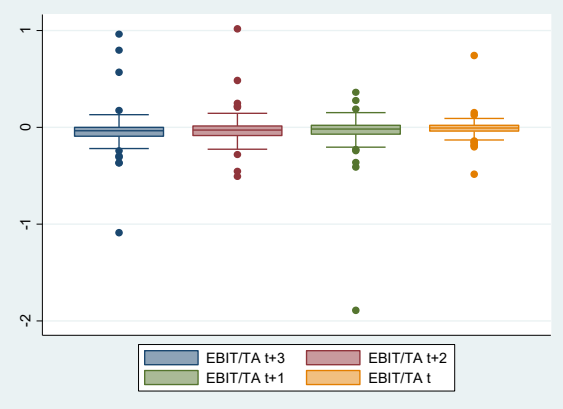
The cash received from this public offering where the shares originally owned by the Government of Indonesia fully belongs to the Government of Indonesia.

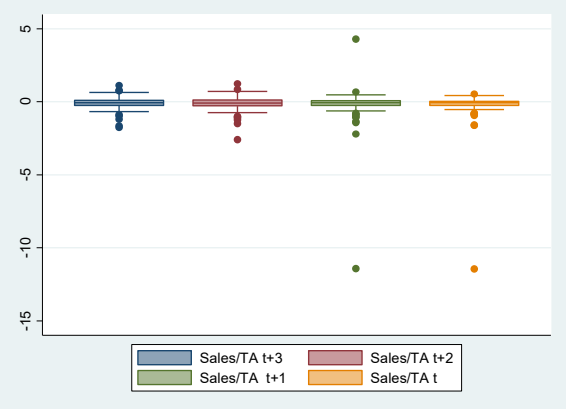
The classification: 20.13% for fixed asset investment, 17.85% for working capital financing, and 62.02% for disinvestment.

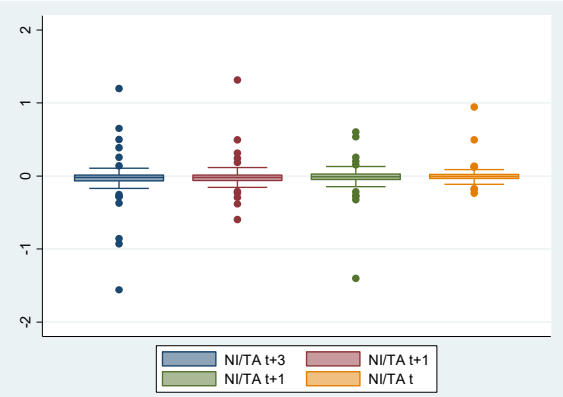
[16] *Tbk* is an abbreviation in Indonesian language for a public company.

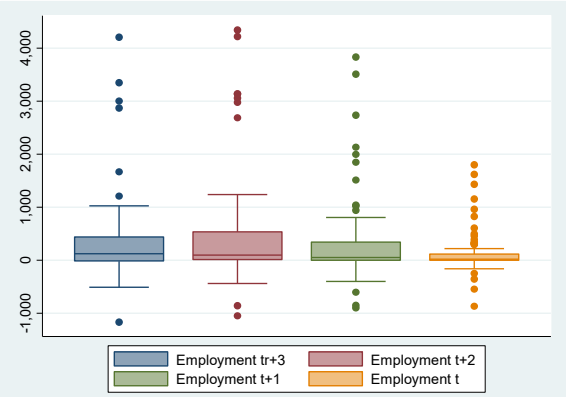
Appendix B.

Box Plots for the Change in Operating Performance from the year prior to the IPO to three years after the IPO









Appendix C.
Quantile Plots for the Change in Operating Performance from the year prior to the IPO to three years after the IPO